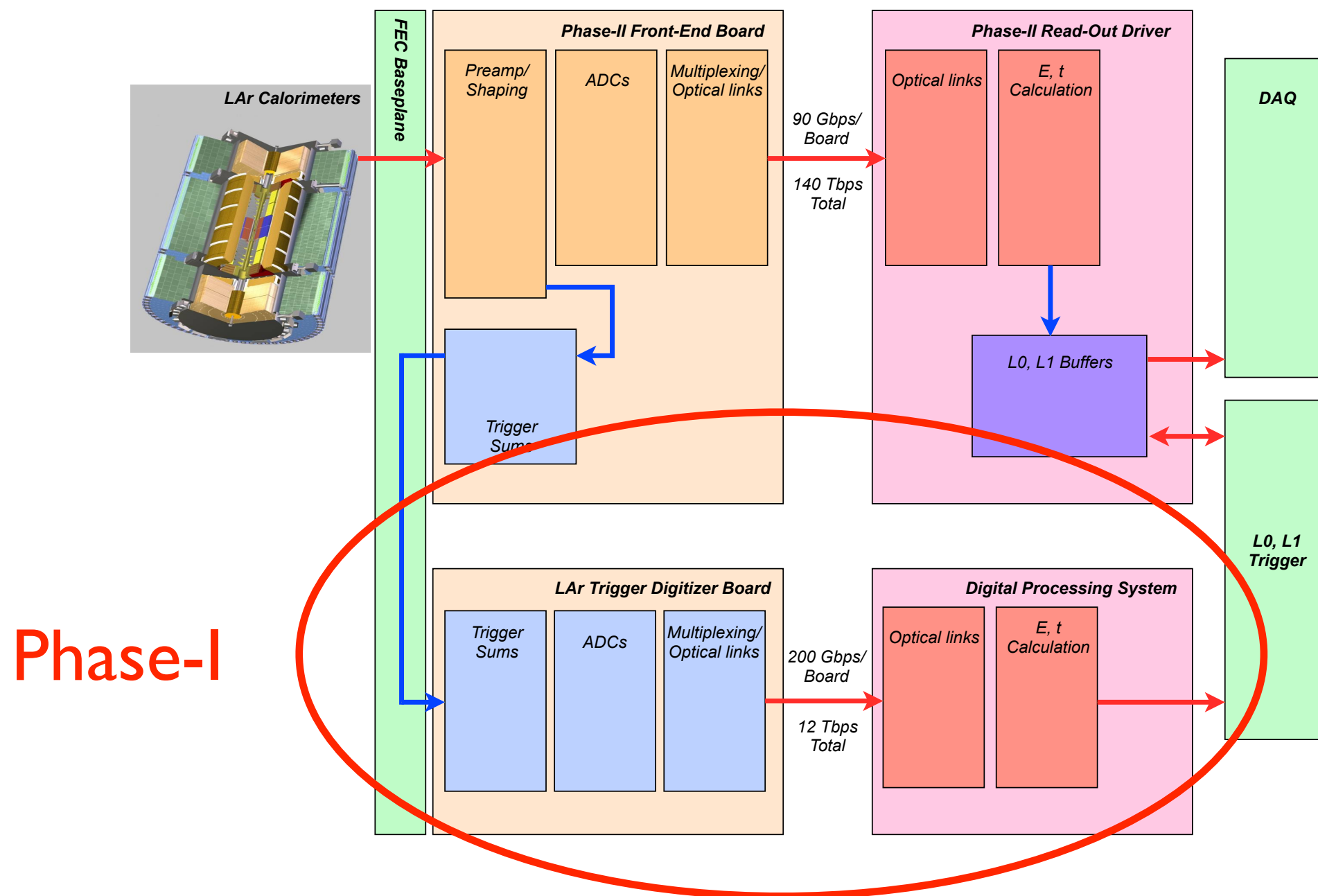


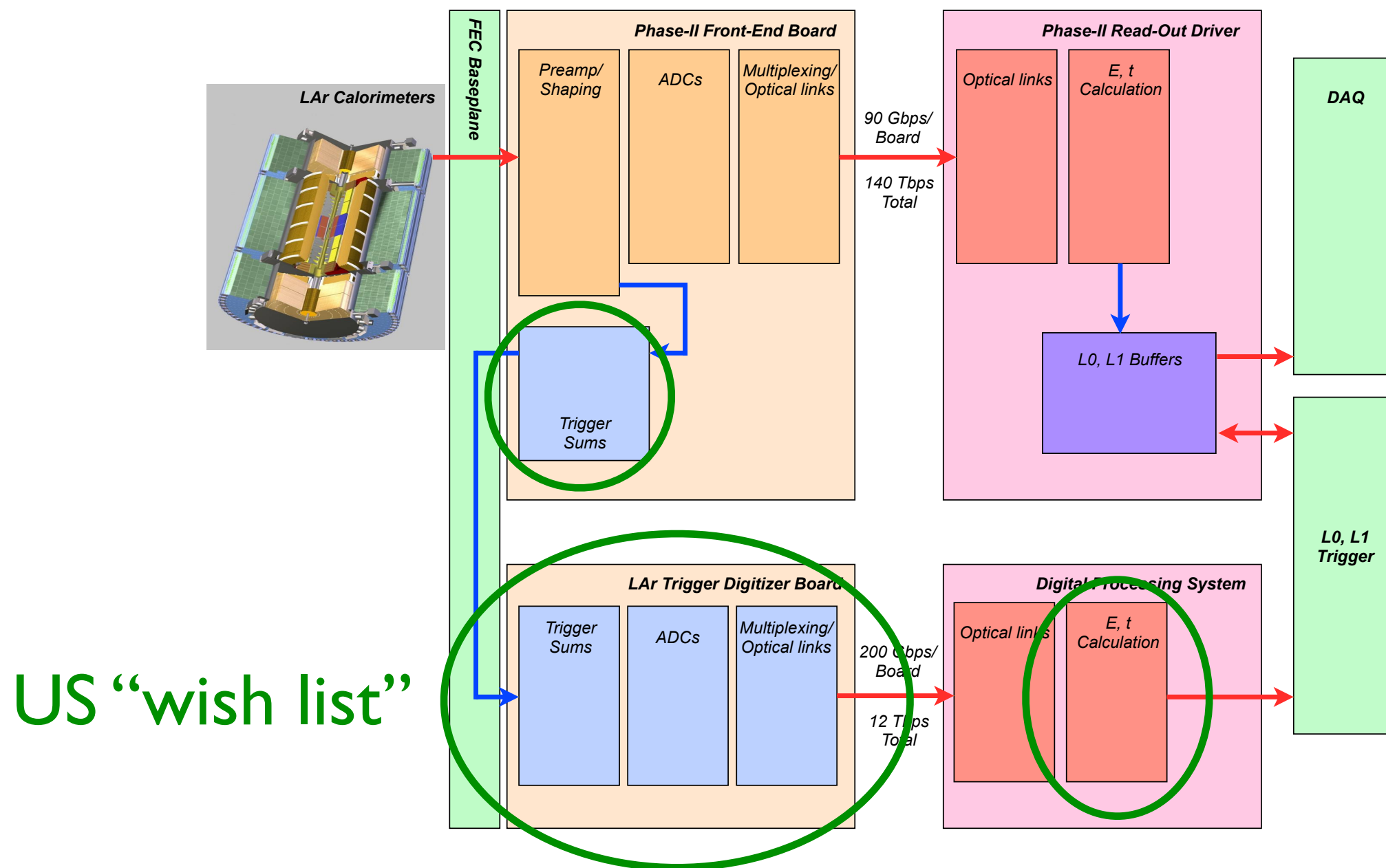
# LAr Status

- Phase-I is first step of full upgrade: the trigger path
- Significant R&D/architecture overlap with phase-II plans



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# Cost: Full Wish List (AYk\$)

	FY14	FY15	FY16	FY17	FY18	Total
LSB	32	128	550	160	0	870(-400)
LTDB	2033	2485	3481	2437	31	10467
sPU	291	215	989*	798*	0*	2293*
FCal Basepl.	17	39	35	0	0	91
Total	2373	2867	5055	3395	31	13721
CDRD	278					278
Guidance	1657	2933	3994	2669	55	11308
Difference	438	66	1061	726	16	2135
LTDB BNL	776	743	1351	1427		4297
LTDB Uni	1257	1742	2130	1010		6170

\*\$900k hardware & firmware design,  
production cost to be re-evaluated this week

# Scope

- Need to balance between
  - US-specific expertise, gained through
    - Initial construction
    - Upgrade R&D program over past 6-7 years
  - Available funding in US
  - Interests of non-US LAr institutions
    - Phase-I IDR will be on 1/9
    - Kick-off on 1/11
      - After that, expect some period of “negotiations” to identify who does what
  - Currently, FE is overwhelmingly dominated by US, BE more even

# Priorities

## 1. LTDB: \$10.5M

1.1. Need some sPU functionality to read out while developing/prototyping/QA: \$900k  $\Rightarrow$  total \$11.4M  $\approx$  guidance

2. Add fractions of sPU and LSB productions if funding allows to do more, guidance +20% allows doing all of it, i.e. full data path

- The LTDB is a well-packaged deliverable, where US has played a leading role all the way
- Guidance -20% will require breaking this up, not clear how while maintaining narrative

# Cost Profile

- We can match the guidance envelope if we don't produce LSBs or sPUs
- We cannot match the profile: FY14 has a ~\$450k deficit
- The LTDB demonstrator needs to be completed in ~March 2014 for installation during LS1
- We cannot completely halt ASIC development and meet the PRR dates necessary for installation in LS2
- Maybe other subsystems have reverse problem, otherwise look for forward funding

# December 14 Request

- Cost estimates that meet the guidance: yes, modulo profile
  - Breakdown in labor, M&S, travel: yes
- Prioritization & scope contingency: yes
- -20%: no, +20% yes
- Milestones: yes, but refining
- NSF deliverables: multiple options
- Not clear it is worth debating scope much more before LAr kick-off meeting  $\Rightarrow$  load what we have now?